

RINGKASAN

Penelitian berjudul Pengaruh Lama *Thawing* Semen Beku Sapi Simmental terhadap Motilitas dan Integritas Membran Spermatozoa. Penelitian di Laboratorium Pengajaran 1, Fakultas Biologi, Universitas Jenderal Soedirman, Purwokerto, Jawa Tengah, mulai tanggal 15 sampai dengan 22 Februari 2016. Penelitian ini bertujuan untuk mengkaji pengaruh lama *thawing* semen beku sapi Simmental terhadap motilitas dan integritas membran spermatozoa.

Materi yang digunakan pada penelitian ini adalah semen beku sapi Simmental diperoleh dari Dinas Peternakan Purwokerto, air ledeng, dan larutan HOST (0,9 gr fruktosa, 0,49 gr natrium sitrat dan 100 ml akuabidestilata). Metode penelitian yang digunakan adalah eksperimental laboratorium dengan Rancangan Acak Lengkap (RAL). Perlakuan yang diujicobakan yaitu $T_1 = \text{Thawing}$ pada menit ke - 15, $T_2 = \text{Thawing}$ pada menit ke - 30, $T_3 = \text{Thawing}$ pada menit ke - 45, dan $T_4 = \text{Thawing}$ pada menit ke - 60 menit. Peubah yang diamati adalah motilitas dan integritas membran.

Hasil penelitian menunjukkan bahwa *thawing* pada menit ke - 15, 30, 45 dan 60 menit semen beku sapi Simmental berpengaruh sangat nyata ($P < 0,01$) terhadap motilitas dan integritas membran spermatozoa. Rataan nilai motilitas spermatozoa berkisar 31,00% - 42,80%, sedangkan rata-rata nilai integritas membran berkisar 45,94% - 60,64%. Hasil uji LSD motilitas spermatozoa setelah *thawing* T_1 tidak berbeda nyata dengan T_2 , T_2 berbeda nyata dengan T_3 , T_3 berbeda nyata dengan T_4 . Hasil uji LSD integritas membran setelah *thawing* T_1 berbeda nyata dengan T_2 , T_1 berbeda nyata dengan T_3 , T_2 berbeda nyata dengan T_3 . Berdasarkan uji ortogonal polinomial menunjukkan bahwa pengaruh lama *thawing* semen beku terhadap persentase motilitas spermatozoa berpola linier dengan persamaan $Y = 47,30 - 0,26 (15) = 43,40\%$ dan pengaruh lama *thawing* semen beku terhadap persentase integritas membran spermatozoa berpola linier dengan persamaan $Y = 66,22 - 0,32 (15) = 61,42\%$.

SUMMARY

The title of this study is “The Effect Of Thawing Duration On The Sperm Motility And Membrane Integrity Of Simmental Bull’s Frozen Semen”. The study was conducted at the Laboratory Teaching 1, Faculty of Biology, Jenderal Sudirman Univeristy, Purwokerto, Central Java in September 15 until February 22, 2016. The aim of this study is to determine the effect of thawing duration of Simmental bulls’ frozen semen on the sperm motility and membrane integrity.

Material that used in this study was the frozen semen of Simmental bull from the Animal Husbandry Office Purwokerto, tap water, and a HOST solution (0.9 g fructose, 0.49 g of sodium citrate and 100 ml aquabidestilata). The study applies an experimental laboratory with a Randomized Complete Design (RCD). The treatments were T1= Thawing at the 15th minute, T2= Thawing at the 30th minute, T3= Thawing at the 45th minute, and T4= Thawing at the 60th minute.

The results of this study show that the thawing at the 15th, 30th, 45th and 60th minutes highly significantly affect ($P < 0.01$) the sperm motility and membrane integrity. The mean values of sperm motility ranges from 31.00% to 42.80%, while that of the sperm membrane integrity ranges from 45.94 % to 60.64 %. The LSD test shows that, on the sperm motility, T1 thawing is not different ($P < 0.05$) from T2, T2 is significantly different ($P > 0.05$) from T3, and T3 is significantly different ($P > 0.05$) from T4. While on the sperm membrane integrity, the test also shows that there is a significant difference ($P > 0.05$) between T1 and T2 thawing. T2 is significantly different ($P > 0.05$) from T3, and T3 is significant different ($P > 0.05$) from T4. The orthogonal polynomial test shows that the effect of thawing duration on the percentage of sperm motility of the Simmental bulls’ frozen semen figures a linear equation $Y = 47.30 - 0.26 (15) = 43.40 \%$ and the effect of thawing duration on the percentage of the sperm membrane integrity figures a linear equation $Y = 66.22 - 0.32 (15) = 61.42\%$.